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USSR

UDC 541.64+547.241

RAFIKOV, S. R., KAZAKOVA, N. D., and D'YACHKOV, G. A., Institute of Chemical Sciences, Academy of Sciences, Kazakh SSR

"Kinetics of Copolymerization of Aryldichlorophosphines With Divinyl"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 12, Series A, No 9, Sep 70, pp 2,019-2,024

Abstract: The authors investigate the rate of copolymerization of aryldichlorophosphines with divinyl as a function of the initial composition of the mixture of monomers, the concentration of azo-bis-isobutyric acid dinitrile and the presence of p-benzoquinone. Phenyl, tolyl and dichlorophenyl dichlorophosphines were investigated. It was found that when aryldichlorophosphines are copolymerized with divinyl, the rate of copolymerization depends on the initial composition of the monomer mixture, reaching a maximum with a concentration of 5-10 mol.% aryldichlorophosphines in the monomer mixture. A small quantity of p-benzoquinone accelerates copolymerization of the organophosphorus compounds and divinyl in the presence of azo-bis-isobutyric acid dinitrile, while in large concentrations, p-benzoquinone serves as an effective inhibitor.

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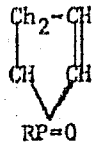
USSR UDC 541.64+547.241

RAFIKOV, S. R., Academician of the Kazakh SSR Academy of Sciences, KAZAKOVA, N. D., D'YACHKOV, G. A., and AGASHKIN, O. V.

"Structure of the Products of Interaction of Aryldichlorophosphines and Divinyl"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 4, 1971, pp 831-833

Abstract: The structure of oxides of unsaturated cyclic phosphines has not been established. This paper presents a study of the conditions of formation of cyclic addition compounds. The structure of the corresponding phosphine oxides is established. The interactions of tolyldichlorophosphine with divinyl are considered, and the infrared and nuclear magnetic resonance spectra of the products of these interactions including unsaturated cyclic phosphine oxide are presented. Analysis of these spectra indicates the following structure



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USSR UDC 541.64:678.746:541.12

RAFIKOV, S. R., DZHILKIBAYEVA, G. M., CHELNOKOVA, G. N., SHALTUPER, G. B., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR, and Kazakh State University imeni S. M. Kirov, Alma Ata, Ministry of Higher and Secondary Specialized Education Kazakk SSR

"Kinetics of the Reaction of Triethyl Phosphite with Linear Halomethylated Polystyrene"

Moscow, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1608-1613

Abstract: The kinetics of the Arbuzov reaction of triethyl phosphate (TEP) with linear iodomethylated polystyrene was studied in carefully purified dioxane over the temperature range 58-97°C. It was found that at temperatures exceeding 70°, isomerization of TEP accompanies the Arbuzov rearrangement. It was shown that the reaction rate constants in the interaction of TEP with iodomethylated styrene decreases as the reaction proceeds and the apparent activation energy depends on the temperature; it is 17.1 kcal/mole

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RAFIKOV, S. R., et al, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1608-1613

at ~ 80°C, and 25.5 kcal/mole at higher temperatures. This is interpreted as an indication of diffusion processes becoming more prominent at higher temperatures. Data are presented on the degree of conversion of the iodomethylated groups of the polystyrene as a function of the reaction period, as well as on the degree of completion of the reaction as calculated from an analysis of the P and I contents of the reaction mixture.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF HALOMETHYLATED COPOLYMERS OF STYRENE AND DIVINYLBENZENE WITH QUINONES, DIHYDROXYBENZENES, AND THEIR DIALKYL ESTERS -U-

AUTHOR-(03)-MUKHITDINOVA, B.A., YERGOZHIN, YE.YE., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 73-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HALOGENATED ORGANIC COMPOUND, COPOLYMER, STYRENE, QUINONE, HYDROXYL RADICAL, POLYMER CROSSLINKING, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1102 STEP NO--UR/0000/70/028/000/0073/0077

CIRC ACCESSION NO--AT0124757

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALOMETHYLATED STYRENE DIVINYLBENZENE COPOLYMERS (OBTAINED IN THE PRESENCE OF ZNCL SUB2 OR SNCL SUB4) WERE CONDENSED WITH QUINONES (I), C SUB6 H SUB4(OH)SUB2, AND DERIVS. THEREOF IN DIOXANE OR CLCH SUB2 CH SUB2 CL TO GIVE CROSSLINKED COPOLYMERS. THE CONDENSATION RATE AND D. P. WERE INVERSELY PROPORTIONAL TO THE CROSSLINK D. THE HIGHEST CONDENSATION RATE WAS OBSD. WITH BROMO AND IODOMETHYLATED COPOLYMERS. COPOLYMERS CONTG. I OR HYDROQUINONE EXHIBITED THE HIGHEST THERMAL STABILITY.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SYNTHESIS AND STUDY OF REDOX POLYMERS BASED ON CROSSLINKED CHLOROMETHYLATED STYRENE DIVINYLBENZENE COPOLYMERS -U-

AUTHOR-(03)-YERGOZHIN, YE.YE., RAFIKOV, S.R., MUKHITDINOVA, B.A.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK. AKAD. NAUK KAZ. SSR 1970, 28, 62-72

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMER CROSSLINKING, STYRENE, BUTADIENE, BENZENE, QUINONE, RESORCINOL, AMINE DERIVATIVE, HYDROQUINONE, POLYMER STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1098 STEP NO--UR/0000/70/028/000/0062/0072

CIRC ACCESSION NO--AT0134784

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 016 UNCLASSIFIED PROCESSING DATE--17NOV70

CIRC ACCESSION NO--AP0134784

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CROSSLINKED CHLOROMETHYLATED STYRENE DIVINYLBENZENE COPOLYMERS WERE CONDENSED WITH QUINONE, RESORCINOL, PYROGALLOL, CATECHOL, (NH SUB2) SUB2 C:S, ANTHRAQUINONE, P,(MEO) SUB2 C SUB6 H SUB4, AND HYDROQUINONE DIACETATE IN DIOXANE OR CLCH SUB2 CH SUB2 CL. THE POLYMERS PREPD. HAD A REDOX CAPACITY OF 2.0-5.0 MEQ-G. THE STRUCTURE OF THE POLYMERS WAS DETD.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SYNTHESIS OF IMIDODICARBOXYLIC ACIDS AND POLY,AMIDO IMIDES, BASED ON THEM -U-

AUTHOR-(03)-NASHKEVICH, S.A., ZHUBANOV, B.A., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 78-82

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IMIDE, CARBOXYLIC ACID, ORGANIC SYNTHESIS, POLYCONDENSATION, POLYMER, HEXAMETHYLENEDIAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1114 STEP NO--UR/0000/70/028/000/0078/0082

CIRC ACCESSION NO--AT0134800

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF POLY(TRIMELLITAMIDO IMIDES) (I) HAVING A M.P. 100-220DEGREES WAS PREPD. BY POLYCONDENSATION OF 4,CARBOXY,N,(OMEGA,CARBOXYDECYL)PHTHALIMIDE AND NH SUB2 (CH SUB2) SUB6 NH SUB2 (II), P OR M,XYLYLENEDIAMINE. ALTERNATIVELY, INTERFACIAL POLYCONDENSATION OF 4,CARBOXY,N,(P,CARBOXYPHENYL)PHTHALIMIDE AND II GAVE A NO. OF STABLE I (TO 300-850EGREES).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF POLYMERS BASED ON AN ADDUCT OF TOLUENE AND MALEIC ANHYDRIDE -U-

AUTHOR-(03)-ALMABEKOV, O.A., ZHUBANOV, B.A., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 83-7

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--MALEIC ANHYDRIDE, TOLUENE, POLYCONDENSATION, AMINE, POLYAMIDE COMPOUND, POLYIMIDE RESIN, THERMAL STABILITY, DIAMINE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0691 STEP NO--UR/0000/70/028/000/0083/0087

CIRC ACCESSION NO--AT0124363

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124363

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIELS ALDER REACTION OF MALEIC ANHYDRIDE WITH PHME GAVE 3,6,ENDO,ETHENO,9,BICYCLO(2,4)OCTANE,6,METHYL,1,2,9,10,TETRACARBOXYLIC ACID DIANHYDRIDE (I) (E. GRAVENSTEIN, ET AL., 1961). THE POLYCONDENSATION OF I WITH BIFUNCTIONAL AMINES IN HCONME SUB2 SOLN. UNDER AR GAVE POLYAMIDES. HEATING THE POLYAMIDES LESS THAN OR EQUAL TO 300DEGREES, FOLLOWED BY ANNEALING 3 HR AT 300DEGREES IN VACUO GAVE HEAT STABLE POLYIMIDES (AMINE USED, DECOMPN. TEMP. IN AIR GIVEN): BENZIDINE, 500DEGREES; (P,H SUB2 HC SUB6 H SUB4) SUB2 O, 410DEGREES; P,XYLYLENEDIAMINE, 400DEGREES; M,XYLYLENEDIAMINE, 390DEGREES; (P,H SUB2 NC SUB6 H SUB4) SUB2, 412DEGREES; HEXAMETHYLENEDIAMINE, 380DEGREES.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

UNCLASSIFIED

TITLE—REDUCTION OF NITRO DERIVATIVES OF POLYSTYRENES AND THEIR COPOLYMERS -U-

PROCESSING DATE—30OCT70

AUTHOR-(02)-YERGOZHIN, YE.YE., RAFIKOV, S.R.

COUNTRY OF INFO—USSR

SOURCE—TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 103-6

DATE PUBLISHED————70

SUBJECT AREAS—CHEMISTRY, MATERIALS

TOPIC TAGS—CHEMICAL REDUCTION, ORGANIC NITRO COMPOUND, STYRENE, POLYSTYRENE RESIN, TIN, COPOLYMER, BUTADIENE, BENZENE, ION EXCHANGE RESIN, IR SPECTRUM

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—2000/0692

STEP NO--UR/0000/70/028/000/0103/0106

CIRC ACCESSION NO—AT0124364

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF NITRO DERIVS. OF POLYSTYRENE OR STYRENE DIVINYLBENZENE COPOLYMERS WITH SN PLUS HCL, SNCL SUB2 PLUS HCL, AQ. NA SUB2 S SUBX SOLN., OR FE PLUS HCL GAVE ONLY THE POLYMERS CONTG. NO, NHOH, AND NH SUB2 GROUPS. IR SPECTRA SHOWED THAT AZOXY, AZO, AND HYDRAZO GROUP CONTG. POLYMERS WERE NOT FORMED. THE INCREASE OF DIVINYL BENZENE GROUPS CONCN. IN THE COPOLYMERS FROM 2 TO 8PERCENT DECREASED THEIR ION EXCHANGE CAPACITY FROM 6.8 TO 5.0 MEQ-G.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THERMAL AND THERMOOXIDATIVE AGING AND STABILIZATION OF POLYIMIDES -U-

AUTHOR-(03)-RAFIKOV, S.R., ARKHIPOVA, I.A., BUKETOVA, N.I.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 234-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHENYLENE, PYROMELLITIC ACID, IMIDE, PHTHALIC ANHYDRIDE, THERMAL STABILITY, CHEMICAL STABILIZER, BROMINATED ORGANIC COMPOUND, TENSILE STRENGTH, PLASTIC FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0687

STEP NO--UR/0460/70/012/003/0234/0237

CIRC ACCESSION NO--AP0124359

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124359

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(OXDIPHENYLENE PYROMELLITIMIDE) (I) POWDER OR FILMS CONTG. HALOGENATED PYROMELLITIC DIANHYDRIDE IN THE MIDDLE OF THE CHAIN OR AHLOGENATED PHTHALIC ANHYDRIDE AT THE TERMINALS, WAS DEGRADED AT 500-630DEGREES. THE STABILIZED I HAS SUPERIOR DEGRADATION RESISTANCE AND HIGH APPARENT ACTIVATION ENERGY. THE MOST EFFECTIVE STABILIZERS WERE THE BROMINATED FRAGMENTS. TTHE STABILIZED I FILMS HAD EXCELLENT TENSILE STYRENGTH, WHICH WAS UNAFFECTED EVEN AT GREATER THAN 500DEGREES.

FACILITY: INST. KHIM. NAUK, ALMA ATA, USSR.

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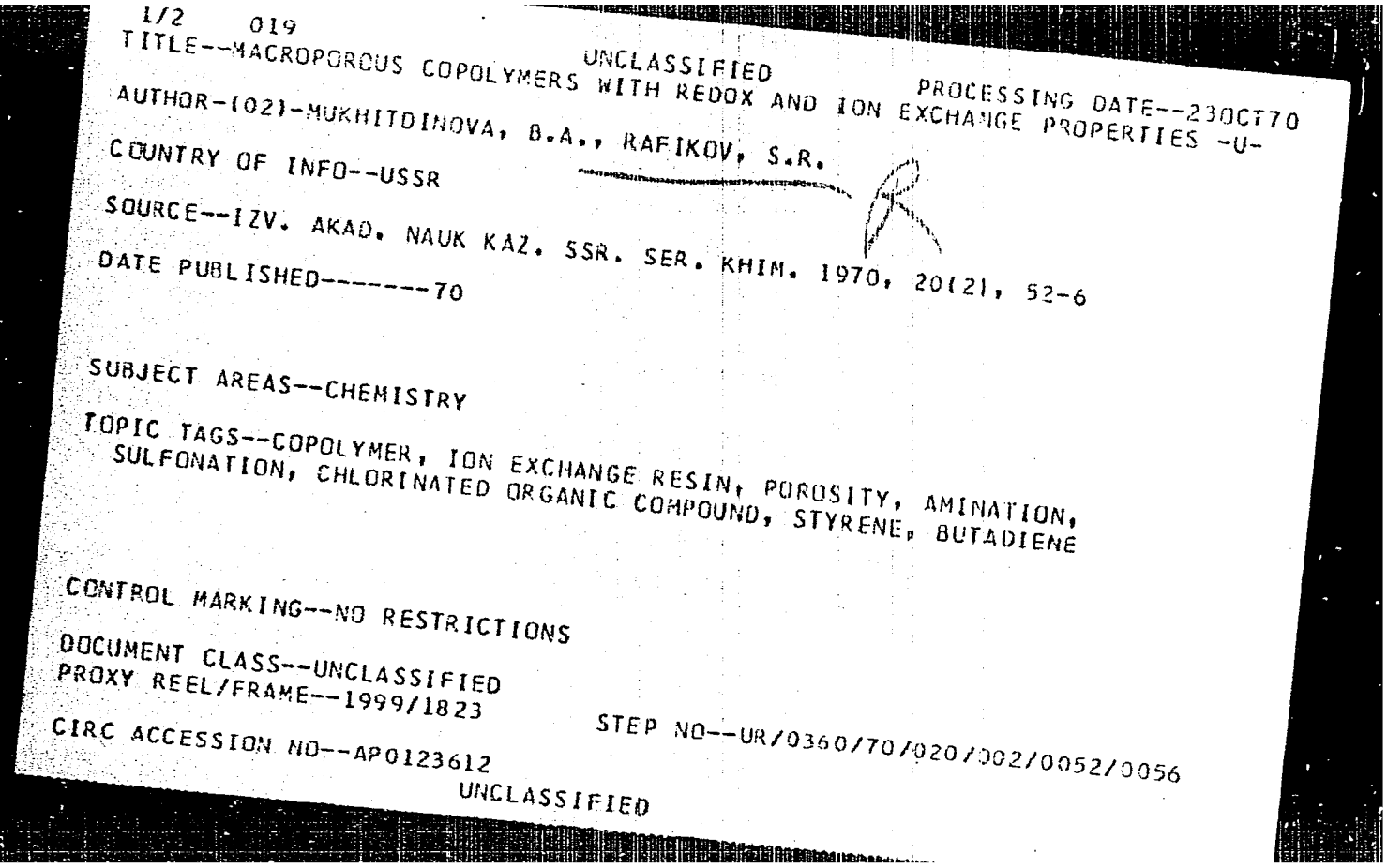

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MACROPOROUS COPOLYMERS WITH REDOX AND ION EXCHANGE PROPERTIES -U-

AUTHOR-(02)-MUKHITDINOVA, B.A., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR. SER. KHIM. 1970, 20(2), 52-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, ION EXCHANGE RESIN, POROSITY, AMINATION, SULFONATION, CHLORINATED ORGANIC COMPOUND, STYRENE, BUTADIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1823

STEP NO--UR/0360/70/020/002/0052/0056

CIRC ACCESSION NO--AP0123612

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2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0123612 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMN. OF STYRENE WITH DIVINYLBENZENE (I) IN ISOOCTANE GAVE POROUS RESINS WHICH WERE CONVERTED TO ION EXCHANGE RESINS WITH REDOX PROPERTIES BY REACTION WITH CLCH SUB2 OME FOLLOWED BY TREATMENT WITH QUINONE, HYDROQUINONE, PYROCATECHOL, RESORCINOL, PYROGALLOL, OR RHO, DIMETHOXYBENZENE. THE EXTENT OF CL GROUP REPLACEMENT INCREASED WITH THE RESIN POROSITY, BUT IT DECREASED WITH THE AMT. OF I IN THE COPOLYMER. THE MODIFIED COPOLYMERS WERE FURTHER AMINATED AND SULFONATED TO INCREASE THEIR HYDROPHILIC PROPERTIES. THE FINAL RESINS HAD 1.7-2.6 MEQUIV PER G ANION EXCHANGE CAPACITY, 1.4-2.0 MEQUIV PER G CATION EXCHANGE CAPACITY AND 1.4-3.5 MEQUIV PER G REDOX CAPACITY.

FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COMPARATIVE STUDY OF THE THERMAL OXIDATIVE STABILITY OF POLYAMIDES AND POLYIMIDES OF VARIOUS STRUCTURES -U-

AUTHOR-(04)-RAFIKOV, S.R., ARKHIPOVA, I.A., BUKETOVA, N.I., LOOKOVA, G.M.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 107-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--THERMAL DEGRADATION, OXIDATIVE DEGRADATION, POLYAMIDE RESIN, POLYIMIDE RESIN, POLYCONDENSATION, PHTHALIC ANHYDRIDE, PYROMELLITIC ACID, ANHYORIDE, HEAT RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0769 STEP NO--UR/0000/70/028/000/0107/0114

CIRC ACCESSION NO--AT0132867

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132867

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYCONDENSATION OF (P,H SUB2 NC SUB6 H SUB4) SUB2 O WITH 1,4,DICHLOROPHTHALIC ANHYDRIDE (I), 1,4,DIBROMOPHTHALIC ANHYDRIDE (II), 4,5,DIIODOPHTHALIC ANHYDRIDE (III), PYROMELLITIC DIANHYDRIDE (IV), OR IV CONTG. SIMILAR TO 1PERCENT I, II OR III GAVE THE CORRESPONDING POLYAMIDES, WHICH, UPON HEATING AT 300DEGREES FOR 3 HR, WERE CONVERTED TO POLYIMIDES. DTA OF THESE POLYMERS SHOWED THAT THE SMALL AMT. OF THE HALOGEN CONTG. MONOMER, ADDED TO THE POLYMN. MIXT., CONSIDERABLY INCREASES THE HEAT RESISTANCE OF THE RESULTING POLYMERS AND INCREASES THE APPARENT ACTIVATION ENERGY OF THEIR THERMAL OXIDATIVE DEGRADATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

172 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COPOLYMERIZATION OF PHENYLACETYLENE WITH SOME ALKYL METHACRYLATES -U-

AUTHOR-(04)-KARZHAUBAYEVA, R.G., LODKOVA, G.M., GLADYSHEV, G.P., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 115-17

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMERIZATION, BENZENE DERIVATIVE, ACETYLENE, ACRYLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0770 STEP NO--UR/0000/70/028/000/0115/0117

CIRC ACCESSION NO--AT0132868

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2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AT0132868 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHC TRIPLE BOND CH (I) WAS COPOLYMD. WITH H SUB2 C:CMECO SUB2 R (II) AT 60DEGREES IN SEALED TUBES CONTG. 0.1PERCENT AZOBISISOBUTYRONITRILE (ON MONOMERS WT.). THE REACTIVITY RATIOS (R SUB1 FOR II AND R SUB2 FOR I) WERE (R IN II, R SUB1, AND R SUB2 GIVEN): ET, 2.1, 0.23; PR, 1.4, 0.22; BU, 1.7, 0.21; ISO-BU, 1.9, 0.27.

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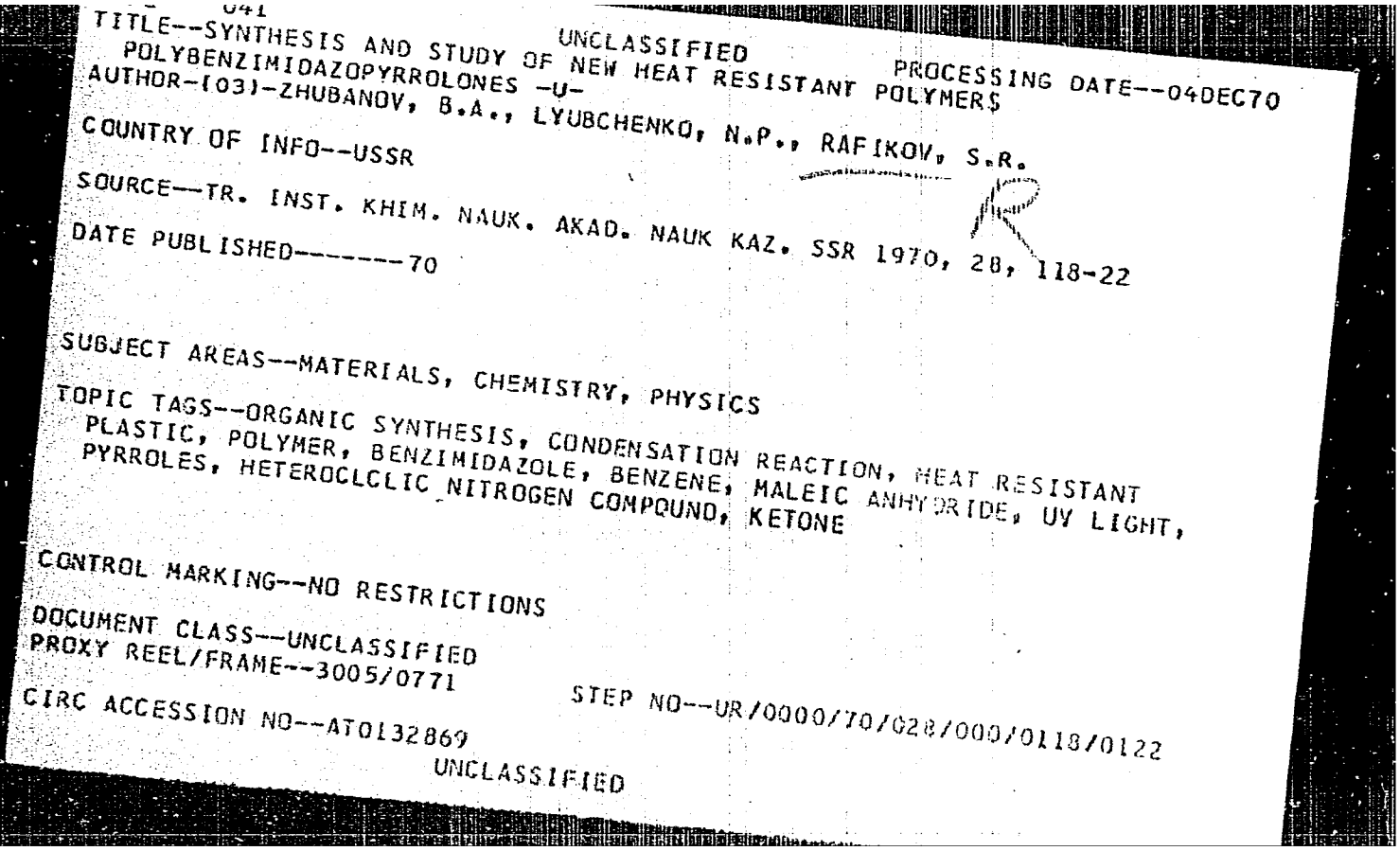

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UNCLASSIFIED

TITLE--SYNTHESIS AND STUDY OF NEW HEAT RESISTANT POLYMERS -U-
POLYBENZIMIDAZOPYRROLONES

PROCESSING DATE--04DEC70

AUTHOR-(03)-ZHUBANOV, B.A., LYUBCHENKO, N.P., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK. AKAD. NAUK KAZ. SSR 1970, 28, 118-22

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--ORGANIC SYNTHESIS, CONDENSATION REACTION, HEAT RESISTANT PLASTIC, POLYMER, BENZIMIDAZOLE, BENZENE, MALEIC ANHYDRIDE, UV LIGHT, PYRROLES, HETEROCYCLIC NITROGEN COMPOUND, KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0771

STEP NO--UR/0000/70/028/000/0118/0122

CIRC ACCESSION NO--AT0132869

UNCLASSIFIED

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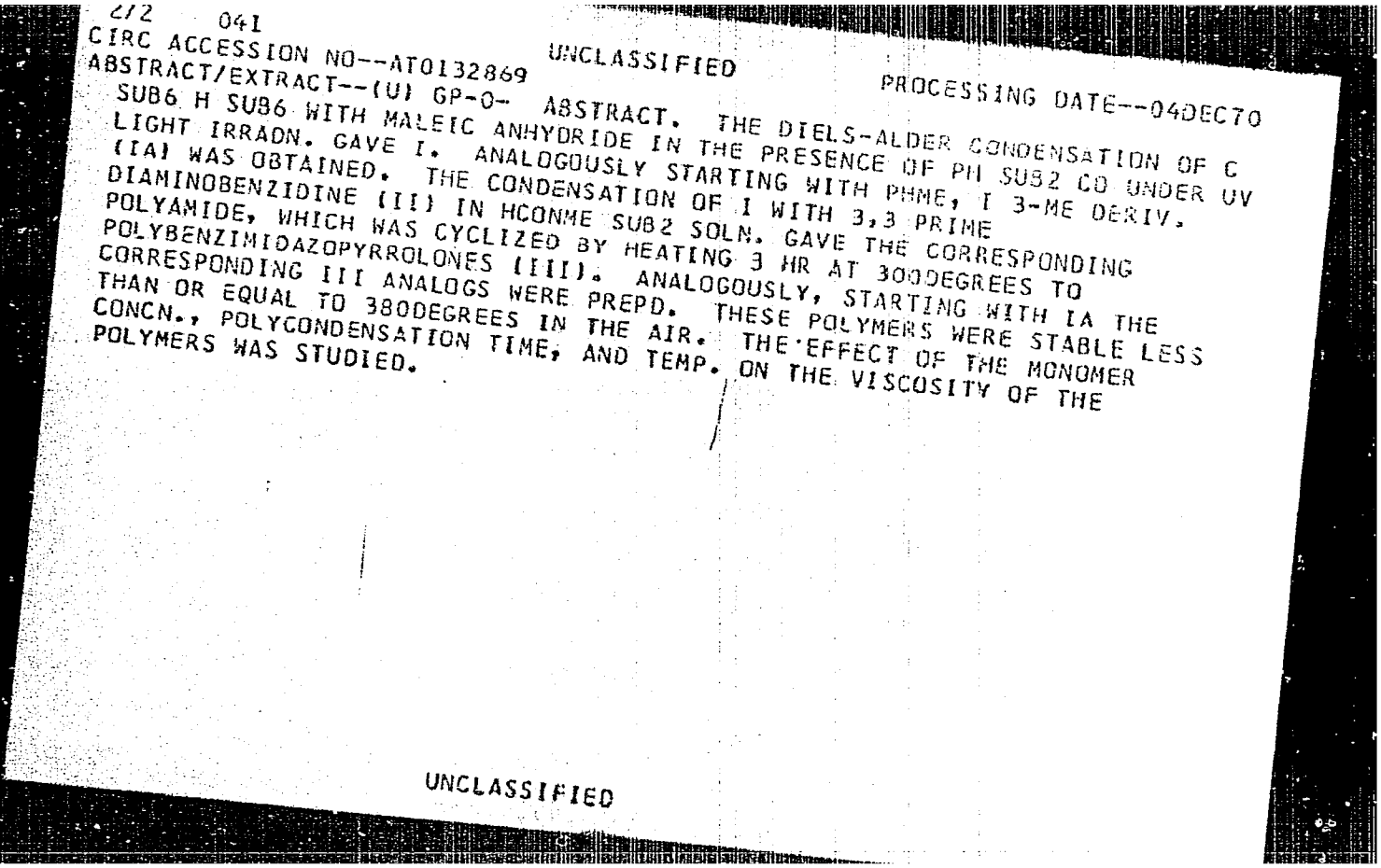

2/2 041
CIRC ACCESSION NO--AT0132869 UNCLASSIFIED PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIELS-ALDER CONDENSATION OF C SUB6 H SUB6 WITH MALEIC ANHYDRIDE IN THE PRESENCE OF PH SUB2 CO UNDER UV LIGHT IRRADN. GAVE I. ANALOGOUSLY STARTING WITH PHME, I 3-ME DERIV. (IA) WAS OBTAINED. THE CONDENSATION OF I WITH 3,3 PRIME DIAMINOBENZIDINE (II) IN HCONME SUB2 SOLN. GAVE THE CORRESPONDING POLYAMIDE, WHICH WAS CYCLIZED BY HEATING 3 HR AT 300DEGREES TO POLYBENZIMIDAZOPYRROLONES (III). ANALOGOUSLY, STARTING WITH IA THE CORRESPONDING III ANALOGS WERE PREPD. THESE POLYMERS WERE STABLE LESS THAN OR EQUAL TO 380DEGREES IN THE AIR. THE EFFECT OF THE MONOMER CONCN., POLYCONDENSATION TIME, AND TEMP. ON THE VISCOSITY OF THE POLYMERS WAS STUDIED.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 541.183;661.183.12

YERGOSHIN, YE. YE., BAKIROVA, R. KH., MUKHITDINOVA, B. A., RAFIKOV, S. R., Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR and the Chemistry Institute of the Bashkir Branch of the USSR Academy of Sciences

"New Macroporous Electron-Ion Exchangers"

Moscow, Izvestiya Akademii Nauk SSSR - Seriya Khimicheskaya, No 11, 1972, pp 2607-2609

Abstract: The known reaction of condensation of aromatic and alipatic diamines with quinone or chloranyl leading to the formation of polyaminoquinones (A. A. Berlin, et al., USSR Author's Certificate No 129016, 1960; Byul. izobr., No 11, 1960; Izv. AN SSR. Otd khim. n., 2260, 1959; Vysokomolekul. soyed., No 1, 1643, 1959; L. A. Blyumenfel'd, et al., Bysokomolekul. soyed., No 1, 1647, 1959) with conjugate bonds in the macromolecule chains having increased heat resistance, magnetic susceptibility and complex-forming properties is used to synthesize new electron-ion exchangers. The macroporous weakly basic anion exchange resin Ional ANP was used as the polyamine. The experimental procedure and results are described. The structure of the synthesized electron-ion exchanger is represented as follows:

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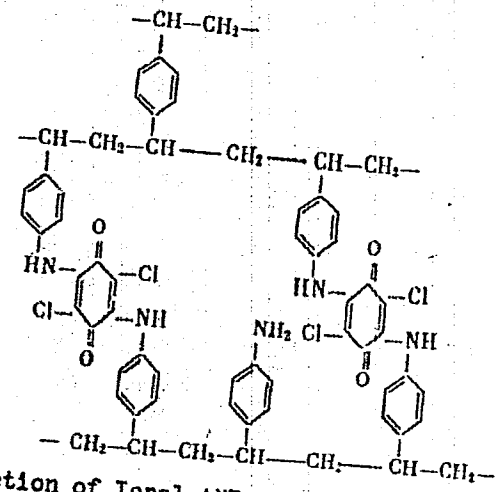
USSR

YERGOSHIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2607-2609



The products of the interaction of Ional ANP with chloranyl for 0.5, 1 and 10 hours contain 16, 90, 15, 20 and 14.93% Cl. This reduction in chlorine in the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

YERGOSHIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2607-2609

polymer can be explained by partial replacement of it by aceto groups. The formation of additional transverse bonds is confirmed by data from chemical analysis, infrared spectra and a reduction in the swelling of the synthesized redox ion exchange reson in dimethyl formamide.

3/3

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 542.91:661.183.123.3

YERGOZHIN, E. E., RAFIKOV, S. R., IMANBEKOVA, S. M., ZHUBANOV, B. A.,
Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR
and the Institute of Chemistry of the Bashkir Branch of the USSR Academy of
Sciences

"Synthesis of New Anion Exchange Resins Based on Polyethylenepolyamine and bis(chloromethyl)-diphenyloxide"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2609-2612

Abstract: A study was made to synthesize anion exchange resins based on polyethylenepolyamine (PEPA) and bis(chloromethyl)diphenyl ether. The condensation of 4,4-bis(chloromethyl)diphenyloxide with PEPA was first carried out at a reduced temperature (0-3°, 30-40 minutes) and then at 20-25° to gelatination. The gel formed was congealed in a dessicator at 70° for 20 hours and at 120° for 30 hours. The anion exchange resin obtained was chrushed, screened and separated into a fraction with grain sizes of 0.25-0.50 mm. The properties of the synthesized ion exchange resins depend to a significant degree on the mole ratio of the chloromethylated diphenyloxide and PEPA and also on their condensation conditions. Comparative data are

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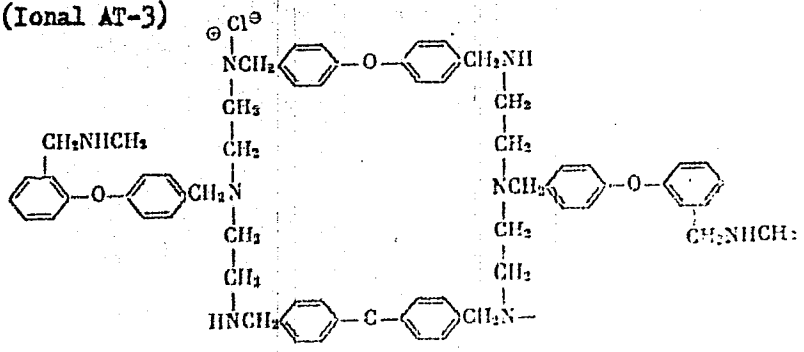
USSR

YERGOZHIN, E. E., et al., Izvestiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972, pp 2609-2612

tabulated. The results of studying the chemical stability of the anion exchange resins with respect to HNO_3, NaOH and H_2O_2 solutions are tabulated.

They indicate that Ional AT-3 appreciably simplifies the process of obtaining the ion exchange resin since it does away with the necessity for separating the isomers. Chemical analysis combined with the infrared spectra considering the mechanism of the interaction of aliphatic amines with chloromethylated aromatic hydrocarbons indicates the following structure of the synthesized anion exchange resins (Ional AT-3)



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1/2 012 UNCLASSIFIED

TITLE--FILTER FOR LIQUIDS -U-

PROCESSING DATE--30OCT70

AUTHOR--RAFIYENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--USSR, 266,724

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FILTRATION, CAPRONE, ORGANIC SILANE, CHEMICAL PATENT, FLUID STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1448

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128847

UNCLASSIFIED

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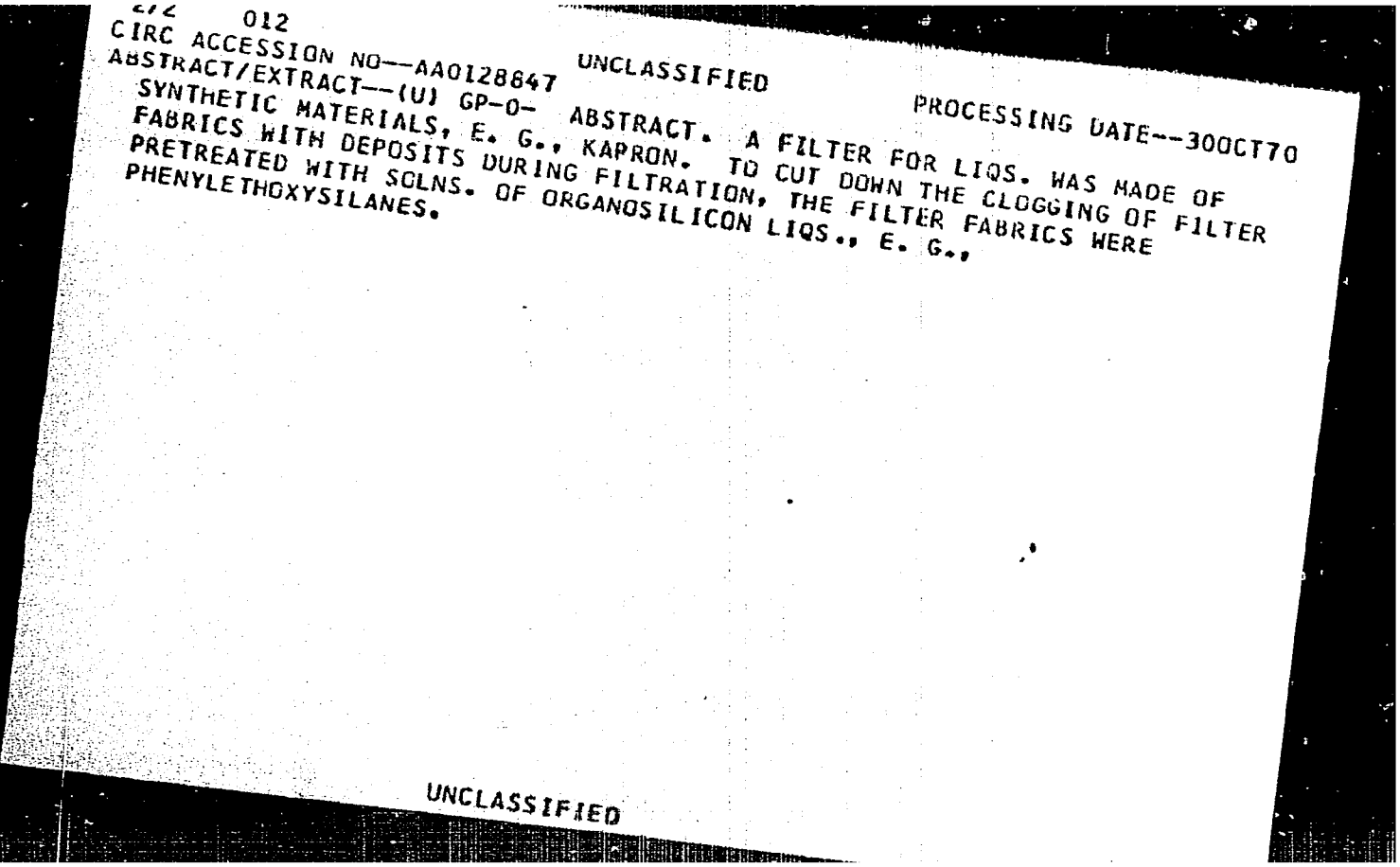

2/2 012
CIRC ACCESSION NO--AA0128647 UNCLASSIFIED
PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FILTER FOR LIQS. WAS MADE OF SYNTHETIC MATERIALS, E. G., KAPRON. TO CUT DOWN THE CLOGGING OF FILTER FABRICS WITH DEPOSITS DURING FILTRATION, THE FILTER FABRICS WERE PRETREATED WITH SOLNS. OF ORGANOSILICON LIQS., E. G., PHENYLETHOXYSILANES.

UNCLASSIFIED

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USSR

UDC 621.382.2

GOL'DBERG, YU. A., RAFIYEV, T. YU., TSARENKOV, B. V., YAKOVLEV, YU. P.

"Surface-Barrier Metal-n-$Ga_{1-x}Al_xAs$ Structures and Their Energy Diagrams"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 462-466

Abstract: The surface-barrier metal (m) and semiconductor (s) structures based on solid solutions of n-$Ga_{1-x}Al_xAs$ of different composition ($0 \leq x \leq 0.4$) alloyed with tellurium were created by chemical deposition of the metals (Au or In) on the surface of the solid solution. The dependence of the inverse capacitance of these m-s-structures on the voltage is linear, and by the slope of this straight line, the electron concentration in the solid solutions of different composition was determined. The dependence of the direct current on the voltage for voltages less than the contact potential difference is exponential, and the dimensionless coefficient $\beta = 1.01-1.15$.

In order to construct the energy diagram of the metal and solid solution, the square root of the short circuit photocurrent of the m-s-structures as a function of the energy of the incident photons was measured. This relation comprises two linear sections. By extrapolation of these sections to the zero value of the photocurrent, the height of the barrier and the width of the forbidden band of the solid solution were determined. On variation of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

GOL'DBERG, YU. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 462-466

composition of the n-$Ga_{1-x}Al_xAs$ solid solution, the height of the metal-semiconductor potential barrier is directly proportional to the width of the forbidden band of the solid solution, and the proportionality factor is close to 2/3. The energy diagram of the metal-n-$Ga_{1-x}Al_xAs$ structures arises mainly from the surface levels of the semiconductor a distance of 2/3 of the width of the forbidden band from the bottom of the conduction band and not from the work function of the metal and the energy of the electron affinity of the semiconductor.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

RAGEZINSKIY, A. I.

TECHNICAL TRANSLATION

FSTC-HT-23- 340-72

ENGLISH TITLE: Operational Characteristics of Type Beta-1 and Beta-2 Isotopic Thermoelectric Generators

FOREIGN TITLE: Ekspluatatsionnyye Kharakteristiki Izotopnykh Termoelektricheskikh Generatorov Tipa "Beta-1" i "Beta-2"

AUTHOR: G. M. Fradkin, V. M. Kodyrekov, A. I. Ragezinskiy, N. P. Ezerskov, Ye. A. Tarakov

SOURCE: Radiatsionnaya Tekhnika, Vtudy, Issue 4, All-Union Scientific Research Institute for Radiation Technology, Atomizdat, Moscow, 1970.

Translated for FSTC by Eric Peabody, Lea Kanner

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--A PIEZOELECTRIC VOLTMETER FOR ALTERNATING CURRENT -U-

AUTHOR-(02)-DZHAGUPOV, R.G., RAGIMOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. PRIBOROSTROYENIYE, NO 2, 1970, 31-33
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT

TOPIC TAGS--VOLTMETER, ALTERNATING CURRENT, PIEZOELECTRIC TRANSDUCER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1693 STEP NO--UR/0146/70/000/002/0031/0033

CIRC ACCESSION NO--AT0123517

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0123517
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY THE BASIC PRINCIPLES INVOLVED IN THE CONSTRUCTION OF HIGH VOLTAGE VOLTMETERS FOR ALTERNATING CURRENT. THE POSSIBILITY OF USING PIEZOELECTRIC TRANSDUCERS FOR THIS PURPOSE IS INVESTIGATED. BASIC RELATIONSHIPS DESCRIBING THE VOLTMETER ARE GIVEN ALONG WITH SOME EXPERIMENTAL DATA. FACILITY: AZERBAYDZHAN INSTITUTE OF PETROLEUM AND CHEMISTRY IMENI A. AZIZBEKOV.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A DIFFERENTIATING FABRY PEROT INTERFEROMETER -U-

AUTHOR-(03)-KOLOSHNIKOV, V.G., LAPSHIN, V.I., RAGIMOV, F.YA.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 179-182

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FABRY PEROT INTERFEROMETER, EMISSION SPECTRUM, FREQUENCY CHARACTERISTIC, DIFFERENTIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1552 STEP NO--UR/0120/70/000/000/0179/0182

CIRC ACCESSION NO--AP0106298

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE DESIGN OF A SCANNING FABRY PEROT INTERFEROMETER WHICH MAKES IT POSSIBLE TO OBTAIN THE DERIVATIVES OF AN EMISSION SPECTRUM WITH RESPECT TO FREQUENCY. THE PRINCIPLE OF OPTICAL DIFFERENTIATION IS BRIEFLY OUTLINED, THE COMPONENTS OF A FABRY PEROT INTERFEROMETER DESIGNED FOR USE IN THE MILIMETER WAVE RANGE ARE ENUMERATED, AND THE RESULTS OF A CHECK OF THE OPERATION OF THIS INTERFEROMETER ARE CITED. FACILITY: AKADEMIA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

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USSR UDC 669.15-194:669.295:621.785.545:620.183

KIDIN, I. N., ANDRYUSHECHKIN, V. I., RAGIMOV, M. M., and KUZNETSOV, A. S., Moscow Institute of Steel and Alloys

"The Effect of Fast Heating on the Formation of the Transition Zone in Bimetals of the Iron-Titanium System"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 11, 1970, pp 130-133

Abstract: An investigation was made of the kinetics of the formation of the transition zone in the bimetals Armco iron-VT1-0 and steel 20-VT1-0 in repeated heating with rates of v = 4 deg/sec (furnace heating) and v = 100 deg/sec (electroheating), in a 940-1070°C interval, and with aging for 0-150 min (v = 4 deg/sec) and 0-4 min (v = 100 deg/sec). The deformation process of the diffusion transition zone in the bimetals intensifies in fast heating with v = 100 deg/sec. The diffusion of titanium in iron in fast heating takes place primarily in the grain boundaries. Microhardness and micro-thermoelectric power methods and X-ray phase analysis and metallographic analysis showed that an increased heating rate from 4 to 100 deg/sec in repeated heating after rolling does not affect the phase composition and structure of the transition zone in the bimetals.

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Coatings

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USSR

UDC: 669.18:621.785.53

KIDIN, I.N., ANDRYUSHECHKIN, V.I., and RACHKOV, N.M., Moscow Institute of Steel and Alloys

"Gas Titanium Plating of Iron in High-Speed Electric Heating"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 123-126

Abstract: A report is presented on the development and investigation of a process for titanium plating of iron from a hydrogen-free vapor-gas phase using high-speed electric heating. Titanium tetrachloride vapors were used as the active medium and were introduced into the reactor by a flow of purified argon. The latter served as a $TiCl_4$ vapor carrier and diluent. The process was studied in the 950-1200°C temperature range with holding time from 1-9 minutes and heating rates of 1, 100, and 1000 degrees per second on commercial iron (about 0.07% carbon). The kinetics of the gas titanium plating process and the structure and nature of the phases formed in gas titanium plating under high-speed electric heating conditions were studied by microscopic analysis methods and measurement of microhardness and microthermoelectromotive forces. Acceleration of heating intensifies the gas titanium plating process, and diffusion layers are obtained only

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

KIDIN, I.N., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 123-126

under fast electric heating conditions (100-1000 degrees per second) at temperatures of 1100°C and higher. Thickness of the layers formed ranges between 20 and 80 microns, depending on saturation conditions. The layers formed represent a solid solution of titanium in Alpha-iron. In some cases, especially in increase of titanium tetrachloride content in the gas mixture of 25%, the formation of two-phase layers was observed.

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(3)

USSR

UDC 628.58:549.74

ABDULLAYEV, G. B., GASANOV, G. G., MEKHTIYEV, M. A., DZHAFAROV, A. I., MAZANOV, D. M., BABAYEV, R. A., SADYKHOV, S. T., TEPLYAKOVA, G. V., and RAGIMOV, R. N.

"Radioprotective Effect of Selenium"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 3, 1973, pp 12-17

Abstract: Sodium selenite administered to Wistar rats 20 minutes after X-irradiation at 490 rad had little protective effect, the survival rate and average life-span being insignificantly higher than in the controls (50% survival rate by day 30). However, the same dose of the compound administered 30 minutes prior to irradiation (intraperitoneally, subcutaneously, or perorally) had a markedly protective effect; the survival rate was 90% and the average life-span 28±3.6 days. When sodium selenite was combined with vitamins E (as an antioxidant) and A (to promote the retention of vitamin E in the body), the protective effect was even more pronounced, the survival rate and average life-span being significantly higher than in the controls (given selenium but not the vitamins).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

Oncology

USSR

UDC 577.391:616.0064.577.15/17

ABDULLAYEV, G. B., GASANOV, G. G., RAGIMOV, R. N., TEPLYAKOVA, G. V., MEKHTIYEV, M. A., and DZHAFAROV, A. I., Institute of Physiology, Institute of Physics, and Institute of Roentgenology and Oncology

"Selenium and Tumor Growth Under Experimental Conditions"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 3, 1973, pp 18-24

Abstract: In mice and rats with transplanted tumors (M-1 sarcoma, Ehrlich's ascitic tumor, and Geren's carcinoma), a single injection of sodium selenite significantly retarded the growth of the tumor, especially if the injection was given when the tumor could barely be felt. The inhibition of tumor growth was even more pronounced when sodium selenite was combined with X-irradiation. In addition, the compound increased the animals' tolerance for radiation. When the animals received the tumor suspension after it had been treated with sodium selenite and heated to 40° for 2 hours, tumors did not begin to appear until 12 to 21 days after inoculation compared to 9 days in the control (given the tumor suspension treated with sodium selenite at room temperature). The inhibitory effect of the selenium compound is attributed to its ability to stimulate the production of endogenous antioxidants and lower the oxygen concentration of the tissues.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR UDC 65.012.012.2.622.276

AZIMOV, Corresponding Member (sic) B. A., RAGIMOV, Sh. M., and EMINOV, I. T.

"Using Mathematical Programming Methods for a Problem in the Control of a Water-Oil Contact"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 2, 1973, pp 11-16

Abstract: Taken as a whole, the problem of controlling the displacement of a water-oil contact involves insuperable mathematical difficulties. In this theoretical article, therefore, the authors consider the problem under the condition that the shift of the apertures is known. It is assumed that the horizontal layer is uniform, the viscosities of the oil and water are equal, and that the motion of the liquid in the layer obeys the linear law of filtration under water-pressure conditions. The problem is formulated in the following way: at every moment in time, the output of the operating apertures is chosen such that the nonviscosity function ε is brought as close to zero as possible at all points. The method of its solution is to determine the norm for ε as a function of the polar coordinate angle θ in the sense of a normalized

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

AZIMOV, B. A., et al, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 2, 1973, pp 11-16

spatial functional and then minimize the norm of the nonviscosity function under the limitations specified. This article is based on an earlier book (B. A. Azimov, et al, Primenenive matematicheskikh metodov i EVM k resheniyu nekotorykh zadach razrabotki neftogazovykh mestorozhdeniy -- Applications of Mathematics and the Electronic Computer in the Solution of Some Problems of Development of Oil and Gas Sources -- Baku, 1969).

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 547.26'118.07

KULIYEV, A. M., ZEYNALOVA, G. A., KULIYEV, A. B., and RAGIMOVA, Sh. A., Institute of the Chemistry of Additives, Academy of Sciences, Azerbaydzhan SSR, Baku

"Synthesis of the Phosphorous Acid Esters Containing Trichloromethyl Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1497-1498

Abstract: Esters of phosphorous acid containing the trichloroacetyl group were synthesized by the reaction of hydroxyalkyltrichloroacetates with ethylenechlorophosphite or catecholphosphorous acid chlorides.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR UDC 547.26'118.07

KULIYEV, A. M., RAGIMOVA, Sh. A. A., ZEYNALOVA, G. A., and KULIYEV, A. B., Institute of Chemistry of Additives, Academy of Sciences of the Azerbaydzhan SSR

"A Method of Making Alkyl-β-trichloroacetoxyethylphosphorous Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 6, Feb 72, Author's Certificate No 328091, Division C, filed 20 Jun 69, published 2 Feb 72, p 64

Translation: This Author's Certificate introduces: 1. A method of making alkyl-β-trichloroacetoxyethylphosphorous acids. As a distinguishing feature of the patent, β-trichloroacetoxyethylphosphorous acid is interacted with aliphatic alcohols with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is done in an inert organic solvent such as benzene.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR UDC 547.26'118.07

KULIYEV, A. M., ZEYNALOVA, G. A., KULIYEV, A. B., RAGIMOVA, SH. A.,
Institute of Chemistry Additives of Academy of Sciences AzerSSR

"Synthesis of Certain Phosphite Esters With Trichloromethyl Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2209-2211

Abstract: In the search for antiwear additives to lubricating oils, β-trichloroacetoxyethyl- and δ-trichloroacetoxybutyl-phosphorous acid chlorides and dichlorides were synthesized by the reaction of β-hydroxyethyl- and δ-hydroxybutyl trichloroacetates with phosphorus trichloride. Also a series of P,P-dialkyl β-trichloroacetoxyethyl phosphites were prepared by the reaction of β-trichloroacetoxyethylphosphorous acid dichloride with aliphatic alcohols in the presence of pyridine. The structure of the synthesized compounds was determined by their IR spectra, two of which are shown. Physical constants and formulas of the compounds are tabulated and preparation procedures are described.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--BIOCHEMICAL CHARACTERISTICS OF STANDARD STRAINS OF BACTERIA BELONGING TO GENUS CITROBACTER -U-
AUTHOR-(03)-RAGINSKAYA, V.P., LIFSHITS, M.B., BATURO, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6, PP 47-50
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FERMENTATION, BACTERIA, SALMONELLA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0832 STEP NO--UR/0016/70/000/006/0047/0050

CIRC ACCESSION NO--AP0126509
UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF STUDYING FERMENTING PROPERTIES OF TEST STRAINS OF BACTERIA BELONGING TO GENUS CITROBACTER. THIRTY FIVE SIGNS RECOMMENDED BY THE INTERNATIONAL SUBCOMMITTEE ON ENTEROBACTERIACAE WERE TESTED; THEIR CONFORMITY TO THE TOXONOMIC CHARACTERISTICS OF THE GENUS CITROBACTER WAS ESTABLISHED. IN ASSOCIATION WITH SIMILARITY OF FERMENTING PROPERTIES OF CITROBACTER, SALMONELLA AND ARISONA BACTERIA A PROPER COMPLEX OF DIFFERENTIAL DIAGNOSTIC TESTS SHOULD BE APPLIED FOR THEIR IDENTIFICATION.

FACILITY: MOSKOVSKIY INSTITUT VAKTSIN I SYVOROTOK IM. MECHNIKOVA.

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USSR

UDC 615.616.24-003.
656.6

ARONOVA, G. V., VELICHKOVSKIY, B. T., RAGOL'SKAYA, F. S., STARKOV, P. S.

"Problem of Inverse Development of Silicosis Experimentally"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 35-36 (from RZh--Farmakologiya, Khimioterapevticheskiye Sredstva, Toksikologiya, No 3, Mar 73, Abstract No 3.54.875)

Translation: The histologic and biochemical alterations in the lungs of animals subject to the effect of quartz (I) or silica sublimate (II) combined with polyvinoxide (III) were compared. Under the effect of I after three months, expressed silicotic alterations were detected in the lungs which built up subsequently. Under the effect of II, the silicotic alterations were more intense after 15 days than under the effect of I, but after three months, an active process of inverse development of fibrosis was detected which ended by the 17th month. For animals receiving II plus III, the dynamics of the inverse development of silicotic alterations were still more expressed. The dynamics of silicotic alterations in animals receiving I plus III were the same as for those receiving II plus III.

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Acc. Nr: AP0036571 Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye Zabolevaniya, 1970, Nr 2, pp 21-24

HYGIENIC, CLINICAL AND EXPERIMENTAL DATA CHARACTERIZING MAGNESITE PNEUMOCONIOSIS

Zeleneva, N. I.; Makarov, Yu. V.; Starikova, S. K.; Babushkina, L. G.; Yarosh, Z. P.; Ragol'skaya, F. S.

Summary

An examination of workers of a magnesite plant with long service record exposed to highly concentrated dust of raw or roasted (burnt) magnesite containing about 1—3% of total SiO_2 revealed 13 cases of pneumoconiosis, chiefly among workers exposed to the effect of roasted magnesite. Roengeno-morphologically magnesite pneumoconiosis is charasterized by diffuse pneumofibrosis with isolated micromaculous elements. Clinical manifestations and periods marking development of the disease justify including it in the group of the so-called "benign" pneumoconiosis. Not infrequently it is associated with symptoms of chronic bronchities and pulmonary emphysema. Experiments on animals demonstrated magnesite dust to have hot an insignificant fibrinogenicity, but confirmed its possible accumulation in the lungs, following its long-term inspiration. By comparison with the raw magnesite dust that of the roasted magnesite has somewhat greater pronounced fibrinogenous properties.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 632.95

RAGOZIN, A. K.

"Effect of Insecticides on Tobacco Yield and Quality"

Tabak (Tobacco), 1972, No 2, pp 46-47 (from RZh-Khimiya, No 20, 25 Oct 72, Abstract No 20N529 by S. A. Roslavtseva)

Translation: In 1968-1970 Dyubek-566 variety of tobacco was experimentally treated in the three- or four-leaf and blossom phases with 2.5% metaphos (I) dust (consumption rate 20-25 kg/ha) and 80% chlorophos (II) in an 0.3% concentration; and in the blossom phase with 40% Rogor [III] in an 0.1% concentration (working fluid consumption 600-800 liters/ha). The additional yield from I was 19.4 centners/ha, from II 14.8, and from III 4.7. Deterioration was found in the commerical quality of the tobacco treated with I. Analysis of cured raw material revealed no deterioration in the smoking properties of tobacco harvested 20 days and two months after treatments; quality declined if tobacco was broken 10 days after treatment. No residues of I-III were found in the cured tobacco.

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USSR

FRADKIN, G. M., BREZHNEVA, N. YE., YERSHOVA, Z. V., BOGDANOV, N. I. (Deceased), KODYUKOV, V. M., VORONIN, A. N., KOZLOV, A. G., MALYKH, YU. A., NIKIPELOV, B. V., RAGOZINSKIY, A. I., FEDOROV, V. V., and CHUSHKIN, YU. V., State Committee on the Use of Atomic Energy USSR, Fourth International Conference of the United Nations on the Peaceful Use of Atomic Energy, Geneva, 6-16 Sep 71

"Development of Isotopic Power Technology in the USSR"

Moscow, Atomnaya Energiya, Vol 31, No 4, Oct 71, pp 358-365

Abstract: The construction in the USSR of isotopic thermoelectric generators for powering oceanographic and navigation devices, hydrographic, automatic radiometeorological, magnetic variation stations, high-elevation cosmic ray stations, and other scientific research stations and ground installations is reported on. The most suitable for fuel applications are isotopes with a half-life period within the limits 100 days to 100 years (approximately 50 isotopes), of which 12-15 can be obtained in large amounts. Most quantities of fission radioactive isotopes and also the most widely used radioactive Sr^{90} are obtained by processing radioactive waste solutions. To simplify isolation of radiochemically pure elements, including Sr^{90}, the group concentration method is used, based on calcium oxalate precipitation. The most promising technique is extraction separation of alkaline-earth elements with the isolation of pure strontium. Here the following extractants are used: a

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FRADKIN, G.M., et al, Moscow, Atomnaya Energiya, Vol 31, No 4, Oct 71, pp 358-365

solution of di-2-ethylhexylorthophosphoric acid in kerosene from a nitric acid medium, and a solution of salicylaldoxime in tributyl phosphate from an alkaline (sodium hydroxide or ammonia) solution. Currently construction has been completed for blocks with activities in the tens and hundreds of kilocuries based on Ce^{144} (20,000 curies), Sr^{90} (9000-100,000 curies), and Cs^{137} (50,000-150,000 curies), and also blocks based on Pu^{238}, Po^{210}, Cm^{242}, and Co^{60}. The thermal capacity of these blocks lies within the range 1-1000 watts. An empirical formula was derived and tested for the power yield in an isotopic (thermal) block. Also discussed is biological protection during development and construction of isotope power sources containing kilocurie amounts of radioactive heat. In dealing with the conversion of radioactive decay energy, the thermoelectric method was found to be most fully mastered at present: low-temperatures semiconductor materials (up to 300°C) have been obtained with quite high efficiencies (5-8%), as well as medium-temperature (300-700°C) and high-temperature (higher than 700°C) semiconductor materials. Combining different materials in the form of cascade elements already permits attainment of 12-15% conversion efficiency in prototypes. Demands of minimum weight and size and also low background of attendant neutron and gamma-radiation led to construction of portable generators of the MIG-67 type based on Pu^{238}. The unique properties of Cm^{242} and Po^{210} (high specific power yield and fairly low-gamma-radiation intensity) made feasible construction of isotopic thermoelectric generators using cascaded converters with efficiencies of 8-10% in the 300-650°K range.

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FRADKIN, G. M., BREZHNEVA, N. YE., YERSHOVA, Z. V., BOGDANOV, N. I., (Deceased), KUDYUKOV, V. M., VORONIN, A. N., KOZLOV, A. G., MALYKH, YU. A., NIKIPELOV, B. V., RAGOZINSKIY, A. I., FEDOROV, V. V. and CHUSHKIN, YU. V., State Committee for the Use of Atomic Energy USSR

"Advancement of Research in the Field of Nuclear Power Engineering in the USSR (Report Presented at the Fourth United Nations International Conference on the Peaceful Uses of Atomic Energy held 6 to 16 September 1971 in Geneva)"

Moscow, Atomnaya energiya, Vol 31, no 4, Oct 71, pp 358-365

Abstract: This report cites data on the Soviet development of the thermoelectric generators designed for feeding oceanographic and navigation devices, hydrographic, automatic, radiometeorological, magnetic variation stations, high-mountain cosmic ray stations, and other scientific research land stations. The report covers the scientific and technical fundamentals of such energy sources and cites the characteristics of some generators. Discussed in some detail are various aspects of radio isotopic fuels, selection, properties, distinctive characteristics, evaluation, requirements, cost factors, availability, handling safety factors, and forms of applica-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

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FRADKIN, G. M., et al, Atomnaya energiya, Vol 31, no 4, Oct 71, pp 358-365

tion. The potential use of extraction separation of alkali-earth elements for obtaining pure strontium is noted. A table lists the comparative characteristics of various isotopes having potential use in thermoelectric generators. Much consideration is given to topics dealing with energy release in an isotopic unit, biological protection, radioactive decay energy conversion, thermal flow chart selection, and generator designs. Described and illustrated are some thermoelectric generators of various designations (using Ce^{144}, Cs^{137}, Sr^{90}, Pu^{236}, $Cm^{242}(Po^{210})$) including Beta-1, Beta-2, Beta-C, Efir, Penguin, MIG-67 (portable-type), and generators with cascade converters. (8 illustrations).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 621.362.2

FRADKIN, G. M., KODYUKOV, V. M., RAGOZINSKIY, A. I., KOROTKOV, N. P., KAZAKOV, Ye. A.

"Operational Characteristics of Type 'Beta-1' and (Beta-2' Isotopic Thermoelectric Generators"

Tr. Vses. n.-i. in-ta radiats. tekhn. (Works of the All-Union Scientific Research Institute of Radiation Technology), 1970, vyp. 4, pp 351-359 (from RZh-Elektrotekhnika i energetika, No 9, Sep 70, Abstract No 9A150)

Translation: The "Beta-1" and "Beta-2" experimental isotopic thermoelectric generators are designed for supplying electric power to ARMS-II automatic radiometeorological stations. The basic parameters of the "Beta-2" are given in the accompanying table. The generator is operationally reliable. The service life is set at five years or more. Eight illustrations, bibliography of two titles.

Abstract includes table on p A-20: Наполнитель = filler; Аргон = argon; $T_{окр}$ = ambient temperature; b = volts; вт = watts; $Z_{вн}$, ом = internal impedance, ohms; $R_{н}$, ом = load resistance, ohms. Ксенон = Xe-non

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RAGULIN, A.P.

POSSIBILITY OF APPLYING THE AUTOGENIC TRAINING METHOD FOR COSMONAUTS

Article by A. P. Ragulin, Moscow, Aviatsiya i kosmonavtika [Aviation and Cosmonautics], Mashinostroyeniye (Current Problems in Space Biology and Medicine), Moscow, 1972, p 234

The autogenic training method has recently been accepted in sports and in clinical practice. It was developed by the German psychiatrist I. Schultz in 1959 (F. A. Mukhin, et al., 1967; G. I. Gurvich, et al., 1967; A. B. Svyadoshch and A. S. Penov, et al., Lobzin, 1968). The physiologic basis of this method is the relationship between the functional state of the central nervous system and the tone of the striated muscles.

The methods for overcoming stress and self-regulation of emotional states are also recommended for the training of cosmonauts (V. I. Marinchuk, 1967). The autogenic training method was included in the program for the training of cosmonauts.

Healthy males in the age group 30-37 years were trained for a period of three months (three times a week, 20 minutes in each case).

Analysis of the results of medical monitoring indicate a decrease in fatigue and also a shortening of the recovery period after exercises in the experimental group in comparison with the control.

Our preliminary results make possible the recommendation on a broader basis of the autogenic training method in studies, training exercises) is considerable.

JPRS 56,495

14 July 72

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THERMODYNAMICS OF OUTER SPHERE COMPLEXES. IV. COEFFICIENTS OF THE ACTIVITY OF THE RACEMATE AND D, AND L, TRISETHYLENEDIAMINECOBALT(III)

AUTHOR-(04)-SMIRNOV, A.P., SIDOROV, P.S., RAGULIN, G.K., MIRONOV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 420-1

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPLEX, THERMODYNAMICS, ISOMER, PERCHLORATE, NITRATE, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0330 STEP NO--UR/0076/70/044/002/0420/0421

CIRC ACCESSION NO--AP0103985

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103985

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFFS. OF ACTIVITY OF THE RACEMATE, AND THE D AND L ISOMERS OF TRISETHYLENEDIAMINE COBALT(III) PERCHLORATE, NITRATE, AND SULFATE IN AQ. SOLNS. ARE DETD.; THEY ARE EQUAL IN MAGNITUDE WITHIN THE LIMITS OF 1PERCENT. THIS MEANS THEIR ABILITY FOR OUTER SPHERE ASSOCN. IS EQUAL. C. J. STEINBERG.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 055 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THERMODYNAMICS OF OUTER SPHERE COMPLEXES. III. EFFECT OF SOLUTION IONIC STRENGTH ON THE STABILITY OF HEXAAMMINE COBALT(III) MONOHALIDES

AUTHOR-(03)-MIRONOV, V.YE., LYUBOMIROVA, K.N., RAGULIN, G.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 416-419

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMICS, COBALT COMPLEX, IONIC BONDING, STABILITY CONSTANT, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0328 STEP NO--UR/0076/70/044/002/0416/0419

CIRC ACCESSION NO--AP0103983

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF (CO(NH SUB3) SUB6) (CLO SUB4) SUB3 IN 0.2M SOLNS. OF LI(CLO SUB4, X), WHERE X IS CL, BR, AND I AT 15 TO 45DEGREES IS STUDIED. THE STABILITY CONSTS, OF THE OUTER SPHERE COMPLEXES ((CO(NH SUB3) SUB6)X) PRIME2 PLUS ARE CALCD. THE NECESSITY FOR CALCG. THE STABILITY CONSTS. OF THE OUTER SPHERE COMPLEXES IN SOLNS. WITH ZERO IONIC STRENGTH IS SHOWN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 541-67

KNUNYANTS, I. L., GEORGIYEV, V. I., GALAKHOV, I. V., RAGULIN, L. I., and NEYMYSHEVA, A. A.

"p-d-Conjugation in Phosphoryl and Thiophosphoryl Groups of Organophosphorus Compounds and Electron Screening of Phosphorus Atom Nucleus"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

Abstract: In the NMR spectra the H' protons on the methyl group of methylalkylthiophosphinic acid fluorides are less shielded than in case of methylalkylphosphinic acid fluorides. Substituting sulfur for oxygen in dialkylphosphinic acid chlorides and fluorides leads to different shifts in p31. This difference is probably due to weak interaction of the sulfur atom in the p-d conjugation and change in the p-d conjugation in the phosphoryl group depending on substituents. Going from phosphine oxides to respective thiooxides is accompanied by slight changes in electronic density at the phosphorus atom shifting consequently the signal of P31 nucleus. In thiophosphorusorganic compounds the electronic density on the phosphorus atom depends on the inductive effect of the substituents. Therefore the magnitude of p31 shifts will increase with increased electronegativity of the substituents on the phosphorus atom. Decrease in the number of C-H bonds at the carbon

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KNUNYANTS, I. L., et al., Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

atom located in the α-position in respect to the phosphorus results in a shift of the P^{31} signal towards a weaker filed, while the F^{19} signal shifts towards stronger fields. The shift in F^{19} signal is constant regardless of the length of the substituent hydrocarbon chain.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--COMPLEXING OF DIFLUOROAMINE WITH CARBONYL COMPOUNDS -U-

AUTHOR-(04)-FOKIN, A.V., KOSYREV, YU.M., GALAKHOV, I.V., RAGULIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 934-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, FLUORINATED ORGANIC COMPOUND, AMINE, COMPLEX COMPOUND, LOW TEMPERATURE EFFECT, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1467 STEP NO--UR/0062/70/000/004/0934/0936

CIRC ACCESSION NO--AP0135138

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135138

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING WERE PREPD. FROM CARBONYL COMPDS. AND HNF SUB2 IN CH SUB2 CL SUB2 AT MINUS 40DEGREES TO MINUS 70DEGREES, AS ADDUCTS OF THE GENERAL TYPE R SUB2 C(OH)NF SUB2 (R SUB2 SHOWN): ME SUB2; ME, ET; ME, H; ET, H; PR, H; ALSO THE ADDUCT OF ET SUB2 O WITH HNF SUB2. ALL THESE WERE DETECTED IN THE SOLN. BY PROTON NMR SPECTRA, WHICH WERE DESCRIBED. ALTHOUGH THE FORMAL STRUCTURES OF THE ADDUCTS ARE UNCERTAIN, THE LIKELY PRECURSORS TO THE ABOVE LISTED DIFLUOROAMINO ALCS. ARE ADDUCTS OF GENERAL TYPE R SUB2 CO.HNF SUB2 BONDED BY A FORM OF H BOND BETWEEN THE CARBONYL O AND THE N ATOM. INITIAL MIXING OF THE REACTANTS RESULTS IN A PROGRESSIVE SHIFT OF THE TRIPLET SIGNAL OF THE HNF SUB2 PROTON TOWARD WEAKER FIELDS; FOR MANY MIN. THE INTENSITY AND FORM OF THE SIGNAL HNG SUB2 REMAIN UNCHANGED, BUT ON LONGER EXPOSURE, AND ESP. AT ROOM TEMP., AN IRREVERSIBLE AND COMPLETE DISAPPEARANCE OF THE HNF SUB2 SIGNAL TAKES PLACE, ALONG WITH APPEARANCE OF A NEW SIGNAL FROM THE HYDROXYL PROTON IN THE DIFLUOROAMINO ALC. PRODUCT. WITH EQUIMOLAR PROPORTION OF REACTANTS, THE INITIAL SHIFT OF THE PROTON SIGNAL OF HNF SUB2 AMTS. TO AS MUCH AS 1-1.5 PPM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF THE REACTION OF DIFLUOROAMINE WITH CARBONYL COMPOUNDS

-U-

AUTHOR-(04)-FOKIN, A.V., KOSYREV, YU.N., GALAKHOV, I.V., RAGULIN, L.I

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 111-14

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, FLUORINATED ORGANIC COMPOUND, AMINE, NITROGEN FLUORIDE, CARBONYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1863 STEP NO--UR/0020/70/192/001/0111/0114

CIRC ACCESSION NO--AT0132125

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

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CIRC ACCESSION NO--AT0132125

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES FOR THE REACTION OF HNF SUB 2 WITH ME SUB 2 CO TO GIVE ME SUB 2 C(NF SUB2)OH WERE SHOWN. IT WAS CONCLUDED THAT DESPITE A SUPERFICIAL RESEMBLANCE TO CYANOHYDRIN FORMATION, THIS REACTION DIFFERS FROM IT. THE REACTION OF HNF SUB 2 PROCEEDS BY AN ELECTROPHILIC MECHANISM, OWING TO THE ACTIVITY OF THE UNSHARED ELECTRON PAIR AT THE CARBONYL O ATOM. THIS IS CONFIRMED BY THE INERTNESS OF (CF SUB3) SUB 2CO IN THIS REACTION, AND ITS HIGH ACTIVITY IN CYANOHYDRIN FORMATION. A REACTION SCHEME WAS SHOWN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC: 681.337.1

BAKSHIS, B. P., BACHULIS, R. I., GIRDZIYAUSKAS, S. I., ZARETSKAS, V.-S. S., RAGUL'SKAS, K. M., Kaunas Polytechnical Institute

"A Photoelectric Input Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296132, division G, filed 11 Aug 69, published 12 Feb 71, p 158

Translation: This Author's Certificate introduces a photoelectric input device which contains a series hook-up comprised of a source of light flux, a condenser lens, a specimen table with the object to be studied, and an objective lens and photovoltaic cells. As a distinguishing feature of the patent, in order to facilitate focusing of the light flux and adjustment of the sensitive layers of the photovoltaic cells with respect to the object to be studied, the photovoltaic cells in the device are held in a coordinate-positioning unit. Mounted in front of the positioning unit is a beam-splitting element, an objective lens, and a device for visual tracking fitted with a screen with a coordinate grid.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 681.327.66

GETSEVICHYUS, Yu.Yu., RAGUL'SKAS, K.N., Kaunas Polytechnical Institute

"A Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 34, 1970, Soviet Patent No 286353, Class 42, Filed 29 Sep 69, p 136

Abstract: This Author's Certificate introduces a memory device which contains discs with a magnetic coating fastened to the shaft of a drive motor or speed reducer. As a distinguishing feature of the patent, manufacturing technology is simplified and deformation of the discs due to centrifugal forces is kept uniform by making the discs from thin rolled sheets with their surfaces joined (for instance cemented) in directions perpendicular to the rolling direction.

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USSR

UDC 681.333.53

RAGUL'SKENE, V. L., SATKYAVICHYUS, E. B., Kaunas Polytechnical Institute

"A Device for Impact Simulation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, 1970, Author's Certificate No 267202, filed 15 Mar 69, pp 122-123

Abstract: The Author's Certificate introduces an impact simulation device which contains an operational amplifier, resistors, and diodes. As a distinguishing feature of the patent, the device is designed for circuit simplification, increased speed, and improved universality. Two resistors are connected to the common point between two diodes connected in series opposition. The other ends of these two resistors are connected respectively to the output of the operational amplifier and to a voltage source which simulates the motion of the body being studied. The other ends of the diodes are connected respectively to the input of the operational amplifier and to the voltage source which simulates the motion of the body being studied.
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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 681.327.12

ZARETSKAS, V.-S. S., ZARETSKAS, S.-G. S., PETROSHYAVICHYUTE, O. S., RAGUL'SKIS, K. M.

"Photoelectric Device for the Measurement and Input of Data into Computers"

Patent No. 327502 (1374753/18-24 from 24 November 1969), Class G 06k 11/00, G 08c 8/01, announced by Kaunas Polytechnical Institute (from Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 5, 1972, p 146)

Abstract: A photoelectric device for the measurement and input of data into computers containing a rotating object table connected with a drive with a pickup for position and velocity, an illuminator with a source of continuous light, an electron-optical system for shaping and converting of information signals with objects, and a programming and control system are described. It is distinguished by the fact that in order to expand the functional potentialities and increase accuracy the irradiator contains a unit with light generation modes with a source of light flashes connected to one of its outputs, a unit for controlling the light intensity, and semitransparent plates installed on the optical axis of the source of light flashes at an angle to the direction of the light flow from the continuous light source to the unit for light intensity control and the optical axis of the objectives of the electron-optical system for shaping and converting information signals. The output of the units for light generation modes and control of light intensity are connected with the outputs of the programming and control system.

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USSR

UDC 681.327.64

KENSTAVICHYUS, A-B. B. and RAGUL'SKIS, K. M.

"Device for Determining the Pattern of Longitudinal Deformations from the Width of Magnetic Tapes"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 165

Abstract: This device, used in film-stretching machines, consists of counting amplifiers connected to a multichannel magnetic head, a recording device, differential circuits, delay lines, pulse oscillator, with starting inputs and logic circuits. It determines the deformation pattern by using the amplifiers to count pulses previously recorded on test magnetic tape by the static method. A short description of the logic circuit operation is given.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC: 681.333.519.2

BUTSEVICHYUS, S. G., GIRDZIYAUSKAS, S. I., ZARETSKAS, V.-S. S., RAGUL'SKIS, K. M., RACHKUS-RACHKAUSKAS, A.-I. I., Kaunas Polytechnical Institute

"A Random Pulse Recorder"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 29, 1970, Soviet Patent No 281910, Class 42, filed 5 Jun 69, p 134

Abstract: This Author's Certificate introduces a random pulse recorder which contains an optical system with a device for compensating image rotation, and a medium which supports a photosensitized recording layer. As a distinguishing feature of the patent, scanning precision is improved and optical and assembly errors are reduced by incorporating a rotating penta prism into the device in the path of the image formed by the light. The stationary annular medium which supports the photosensitized film is installed concentrically with the axis of rotation of the penta prism.

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USSR UDC 581.327.11

GOLOVIZNIN, K. M., ZARETSKAS, V.-S. S., RAGUL'SKIS, K. M., RUDGAL'VIS, B. V., YAKUTIS, T. V., Kaunas Polytechnical Institute

"A Device for Data Registration"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288413, class 42, filed 23 May 69, published 3 Dec 70, p 154

Translation: This Author's Certificate introduces a device for data registration which contains a videographic tube with deflecting system, and a hollow drum with a carrier. As a distinguishing feature of the patent, the functional possibilities of the device are extended by installing additional electrodes along the printing line of the videographic tube. These electrodes are connected to one of the outputs of a trace module whose other output is connected to the beam current modulator of the tube, and the deflecting system is connected to the recording signal amplifier, the scanning oscillator and the input of the trace module respectively.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 535.36:621.375.826

POPOVICHEV, V.I., RAGUL'SKIY, V.V., FAYZULLOV, F.S.

"On A Q Switching Technic Using Stimulated Mandelstam--Brillouin Scattering"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11), pp 126-129

Abstract: A previous work of which Ragul'skiy and Fayzullov were coauthors (Pis'ma v ZhSTF, 1969, Vol 9, p 11) discussed generation of light pulses with a power of ~ 100 Mw by means of Q switching caused by stimulated Mandelstam--Brillouin scattering in a laser resonator. The present paper is devoted to a theoretical and experimental clarification of the conditions necessary for realization of such a generation regime. It is shown that the radiation intensity of free generation and its energy density must exceed specific threshold values. The frequency shift of the generated radiation relative to the amplification line center was measured. The authors thank Ye. A. Yukov for helpful discussions. 3 fig. 8 ref. Received by editors, 22 May 1972.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 621.375.82

POPOVICHEV, V. I., RAGUL'SKIY, V. V., FAYZULLOV, F. S.

"Producing 1-Mw Pulses With Free Generation of a Ruby Laser"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 135-136 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1040)

Translation: Radiation pulses with an energy of 0.3 joule, a length of 0.2-0.8 μsec, and a spectral width of $1.3 \cdot 10^{-3}$ cm^{-1} were obtained through generation in a resonator with weak feedback. Authors abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR UDC: 621.373:530.145.6

GRAZYUK, A. Z., POPOVICHEV, V. I., RAGUL'SKIY, V. V., FAYZULLOV, F. S.

"Increasing Emission Brightness by Means of a Brillouin Laser"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 70-78 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D184)

Translation: It is shown that pumping intensity, energy density and pulse length must exceed certain threshold values to increase brightness by means of lasers on forced scattering. Two Brillouin lasers are experimentally studied: a carbon disulfide laser with brightness amplification, and an ether laser without brightness amplification. A special ruby laser with parameters which satisfy conditions of brightness amplification was used for pumping the carbon disulfide laser. The following characteristics are obtained for a carbon disulfide Brillouin laser: energy efficiency 2 percent; divergence of converted emission $3 \cdot 10^{-4}$ radian (close to diffraction); brightness amplification by a factor of 9. Efficiency in the Brillouin ether laser is 20 percent. Five illustrations, two tables, bibliography of eighteen titles. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--REPLACEMENT OF A BETA CYANOETHYL GROUP WITH BETA CARBAMIDOETHYL GROUPS -U-

AUTHOR-(03)-BUCKUS, P., RAGUOTIENE, N., BUCKIENE, A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 115-16.

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL REACTION MECHANISM, AMINE DERIVATIVE, CYANATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1321 STEP NO--UR/0366/70/006/005/1115/1118

CIRC ACCESSION NO--APO136995

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

2/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134695

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING RCH(CO SUB2 H)NR PRIME1 CH SUB2 CH SUB2 CN (R IS H, ME, ISO,PR, ISO,BU, OR BU; R PRIME1 IS H, CH SUB2 CH SUB2 CN, OR CH SUB2 CH SUB2 CONH SUB2) WITH H SUB2 C:CHCONH SUB2 GAVE RCH(CO SUB2 H)N(CH SUB2 CH SUB2 CONH SUB2) SUB2. THE MECHANISM OF THIS REACTION IS DISCUSSED. FACILITY: VIL'NYUS. GOS. PEDAGOG. INST., VILNIUS, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

RAINCHIK, V.M.

UDC 621.316.722.1 (088.8)

"Pulse D-C Voltage Regulator"

USSR Author's Certificate No 259970, filed 30 Oct 68, published 4 May 70 (from RZh--Elektronika i yeye primeneniya, No 12, December 1970, Abstract No 12B551P)

Translation: The circuit of a transistorized d-c voltage regulator with pulse control is patented, in which duration modulation is accomplished with the help of the combination of a sawtoothed-form signal of fixed frequency and a variable d-c signal. The sawtoothed voltage is shaped with the aid of a RC-circuit which is commutated by a multivibrator circuit with RC-coupling of the fixed frequency. The RC-circuit forming the sawteeth is connected to the base circuit of the modulating transistor, the collector of which is connected to the base of the control transistor. The emitter of the modulating transistor is connected with the collector of an amplifier transistor, which is connected across a load resistor with the negative pole of the output voltage. As a result, with unblocking of the modulating transistor, a cutoff voltage which is removed from the load resistor of the amplifier transistor is fed to the base of the control transistor. During this, reliable blocking is assured of the control transistor without a supplementary voltage source or supplementary circuits. 1 ill. S.D.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR UDC 621.371.029.6

AMANOV, S. A., KOLARZH, V. V., CHEN, B. B., KADYROV, I., and RAIMKULOVA, K.

"Statistical Characteristics of UHF Signal Distribution Over Open Land and Mountain Waterways"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 2 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 2--collection of works) "Nauka," 1972 pp 13-17 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A352)

Translation: Experimental integral functions are given for the distribution of average-time values of the signal attenuation factor, together with results of an investigation into the daily course of the fading range during the various months for land and mountain waterways in the rayon of Lake Issyk-Kul'. Two illustrations, bibliography of two. A. L.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 536.581.001.2

IKSANOV, CH. N., and RAIMOV, N. Z.

"On Calculating the Temperature Distribution in the Thermal Chambers of Small Thermostats"

Kazan', Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), No 146, 1972, pp 95-99 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.950)

Translation: The authors discuss the question of the steady-state distribution of heat in the thermal chambers of small thermostats. Using several assumptions, they obtain a physical model in the form of two cylinders, in one of which there are surface-distributed discharges of heat at the end faces. On the basis of this model, they formulate partial differential equations with the appropriate boundary conditions, and use the Fourier method to solve the problem. They also produce an approximative formula that enables them to find the axial temperature distribution in the thermal chambers of a small thermostat. (1 illustration; 1 bibliog. ref.; abstract)

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 528.482÷69.058.2

RAINKIN, V. Ya., Moscow Institute of Geodetic, Aerial Photographic and Cartographic Engineers

"Determination of Bend in the Ostankinsk Television Tower by Geodetic Methods"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geodeziya i Aerofotos"yemka, No 1, 1972, pp 43-51

Abstract: The 533-meter Ostankinsk television tower is in the form of two conical reinforced-concrete shells topped by a cylindrical shell of the same material, and a steel antenna. The base shell rests on 10 supports which transmit the weight load to the foundation. The structure bends because of differential heating by solar radiation, and from other causes.

Formulas for calculating displacement in the case of clear, cloudless weather were developed, and measurements made at various vertical points on the tower. Factors considered were air temperature, solar radiation absorption, amount of solar radiation, and heat transfer of the tower surface.

Conclusions: 1) movement of the upper part of the tower is described by a curve whose parameters vary with the season, and depend especially on

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

RAINKIN, V. Ya., Izvestiya Vysshikh Uchebnykh Zavedeniy, Geodeziya i Aerofotos"yemka, No 1, 1972, pp 43-51

differences in solar radiation; 2) in summer, maximal displacement occurs in the reinforced-concrete portion of the tower at 1000-1200 hrs on the west, and at 2000 hrs on the east; and in the antenna at 1000 hrs on the west and 1800 hrs on the east; 2) maximal deflection of the tower toward the north occurs at 1600 hrs for the concrete shell, and at 1800 hrs for the antenna. Tabular and computational data are included in the article.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC: 528.482

RAINKIN, V. Ya.

"Determination of the Verticality of the Ostankino Television Tower"

Moscow, Geodeziya i Kartografiya, No 11, 1971, pp 26-30

Abstract: The paper presents the procedure, results and accuracy of a geodetic method of determining the verticality of the 533-meter Ostankino television tower. The observations were made from geodetic marks 11 and 16 sighting on marks of rhombic shape fixed to the wall of the tower at 19.5, 385 and 520 meters. The geodetic marks are concrete pedestals 1.5 meters high located on mutually perpendicular axes through the tower at distances of 300 and 600 meters. The measurements were made with Theo 010 optical theodolites with superposed levels having scale divisions of 10". A detailed description is given of the observation program. The deflection of the rhombic sighting marks from the geometric axis of the structure was determined as the difference between the direction to the mark and the half-sum of the directions to the generatrices. The results are summarized in tables. It was found that there are no appreciable vari-

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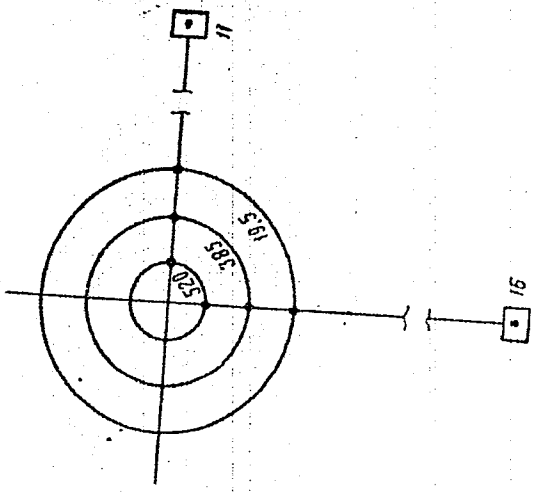
USSR

RAINKIN, V. Ya., Geodeziya i Kartografiya, No 11, 1971, pp 26-30

ations in the verticality of the tower with wind speeds of 2-5 m/s, wind directions from 10 to 350° and air temperatures from -9 to +18°C. Two figures, three tables.



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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

USSR

UDC 681.325.53

RAISOV, O. A., VASIL'YEV, V. M., GASHCHAK, P. S., SHALAMOV, G. P.

"A Device for Converting Binary-Decimal Numbers to Binary"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 97, patent No 260962, filed 23 Dec 68

Abstract: This Author's Certificate introduces a device for converting binary-decimal numbers to binary. The unit contains a binary-decimal number register, a four-digit tetrad memory register, a tetrad counter, a memory register for results, a pulse distributer, delay lines, rectifiers, a single-digit adder, and a control circuit. As a distinguishing feature of the patent, the circuit is simplified and reliability is improved by connecting the inputs of the four-digit tetrad memory register to the outputs of the binary-decimal number register, tetrad counter, and pulse distributer, while the output of this register is connected to a rectifier which is tied at the output to one of the adder inputs to which the output of the memory register for the result is connected through another rectifier and a delay line. The memory register output is also connected to a third rectifier whose output is connected to the second input of the adder,

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USSR UDC 681.325.53

RAISOV, O. A., et al., Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 97. patent No 260962, filed 23 Dec 68

this input also being connected to the output of the memory register for the result through a fourth rectifier and delay lines. The adder outputs are connected to the inputs of the memory register for the result which is connected by its inputs to the distributer outputs. The control circuit is connected to the inputs of the distributer, rectifiers, and tetrad counter.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ELECTRON SPIN ECHO TECHNIQUE FOR SPATIAL RADICAL DISTRIBUTION INVESTIGATION IN IRRADIATED SOLID SUBSTANCES: INFLUENCE OF LET, LINEAR

AUTHOR-(02)-TSVETKOV, YU.D., RAITSIMRING, A.M.

COUNTRY OF INFO--USSR

SOURCE--RADIAL. EFF. 1970, 3(1-2), 61-4

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SPIN, FREE RADICAL, ECHO, SULFURIC ACID, METHANOL, IRRADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2257 STEP NO--UK/0000/70/003/01-/0061/0064

CIRC ACCESSION NO--AP0125835

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202620001-6"